CHIAYO

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TÜV CERT
DIN EN ISO 9001
Certificate NO:09 100 89126

GOOD DESIGN
PRODUCT

IT'S VERY WELL
MADE IN TAIWAN

Design Award

HKEIA AWARD
For Outstanding Innovation
and Technology Products

RoHS
GREEN PRODUCT
It has been RoHS Compliant

IC：3563A-CHALLENGER

IC：3563A-SQ5016

IC：3563A-SM5016

CHALLENGER 100

Portable Sound System

OPERATION MANUAL

CHIAYO ELECTRONICS CO.,LTD

CHIAYO

Challenger 1000 Operation Manual

Congratulation and thank you for the purchase of this all-in-one portable sound system. To ensure a trouble-free operation, please read the manual thoroughly to fully understand its controls and functions.

Followings are various Challenger 1000 variants :
1. Challenger 1000 portable sound system only.(Fig. 1)
2. Challenger 1000 with CD / USB Player.(Fig.2)
3. Challenger 1000 with Tape Deck.(Fig.3)
4. Challenger 1000 with CD / USB Player & Digital Recorder.(Fig.4)

All the above versions, except Fig.3, can be installed with up to 4 receiver modules, among which one can be transmitter module.
The wireless receiver/transmitter module can be in either UHF or VHF band and is a PLL synthesized type with 16 preset frequencies.

Configuration :

All versions of Challenger 1000 series come equipped with the following :
1. AC power cord.
2. 1~4 or no wireless receiver/transmitter module(s).
3. 1~4 transmitters, either handheld or bodypack transmitter (except version with no module installed).

Optional accessories :

1. Weather proof dust cover.
2. Tripod stand
3. Companion powered speaker (Slave speaker).(Fig. 5)
4. Companion passive speaker C-SP.(Fig. 6)
5. Wired microphone.

Remark: Manufacturer reserves the rights to change the above combinations without prior notice.

Maintenance-free Lead Acid battery

Guidelines for maintenance-free Batteries:
1. Battery should operate at temperatures between 15°C ~ 50°C. To ensure a longer life span, it should be kept between 5°C ~ 35°C. For optimum result, 20°C ~ 25°C will be ideal. When temperature falls 15 degrees below zero, battery will undergo some changes in its chemical contents and therefore cannot be recharged. Operating the battery at higher temperature will result in higher capacity but shorter lifespan, whereas lower temperatures operation has a longer lifespan but less capacity.
2. If the battery is not recharged 72 hrs after it is completely used, it will be permanently damaged.
3. When the battery is being charged, the internal gases will be electrolyzed into water at the negative charge, maintaining the battery's storage abilities with no water added. However, erosion at the charged ends of the battery will cause poor performance.
4. The battery's cycle lifespan (no. of charge and discharge cycle) is determined by the degree at which power is dissipated., especially the degree of discharged each time it is used and the recovery charging method. For normal use, the battery can be used for longer hours when less power is dissipated each time and vice versa. At 25°C, maintenance-free batteries could be charged 150 ~ 200 times at 100% discharge each time.
5. Decrease in capacity, internal short circuit, deformation in appearance, erosion of charged ends and decrease in open circuit voltage are symbols indicating battery is approaching the end of its life cycle.
6. When two batteries are used in parallel connection, the resistance of the cables should be kept equal.

Properties of the Lead Acid Battery:
1. Has no memory effect. Can be charged at anytime, even when the recharge indication light is not on.
2 .Performance and efficiency are affected by changes in the environment, especially temperature and humidity. (Best operated between 20°C ~ 25°C)
3. Battery discharge naturally according to a certain pattern even not in use. For best performance and a prolonged lifespan, it should be recharged every month even when not in use.
4. Under normal circumstances, battery could last for about a year.
5. When the battery's life expires, possible indicators include internal short-circuit, decrease in capacity, deformation in appearance, erosion of charged ends and decrease in operating voltage.

User's Precautions:
1. For first-time use, charge the battery for 10 hrs until it is fully charged.
2. To maintain performance and lifespan, if product has not been used for 3 months after the initial shipment, please fully charge the battery.
3. Before each use, it's advisable to charge the battery to its full capacity.
4. The average lifespan of the battery is one year. The user is advised to change the battery after one year of use.
5. The current consumption is in direct ratio with load current. The more current consumption, the less the operation time.
6. SMART and FOCUS operate on one 12V/2.9AH battery. ADVENTURE, CHALLENGER, and VICTORY operate on two 12V/5AH batteries.

Operation of wireless microphones

Chiayo Transmitters and Receivers have factory preset to allow immediate use after switch-on.

However, please note that the transmitter Sensitivity function is dependent on application such
as close proximity singing or tripod mouth speech. To avoid over-modulation and distortion, please check whether the preset sensitivity level is suitable for your particular application. For close proximity singing purposes, please select the lowest sensitivity level whereas for tripod mount speech purposes, please select a higher sensitivity level.

If you have made changes to the setting, after making proper selection on Transmitter and Receiver settings the system is ready for operation. However, both antennas of the receiver must be installed to assure a good reception.

Caution and tips on how to obtain the best results.

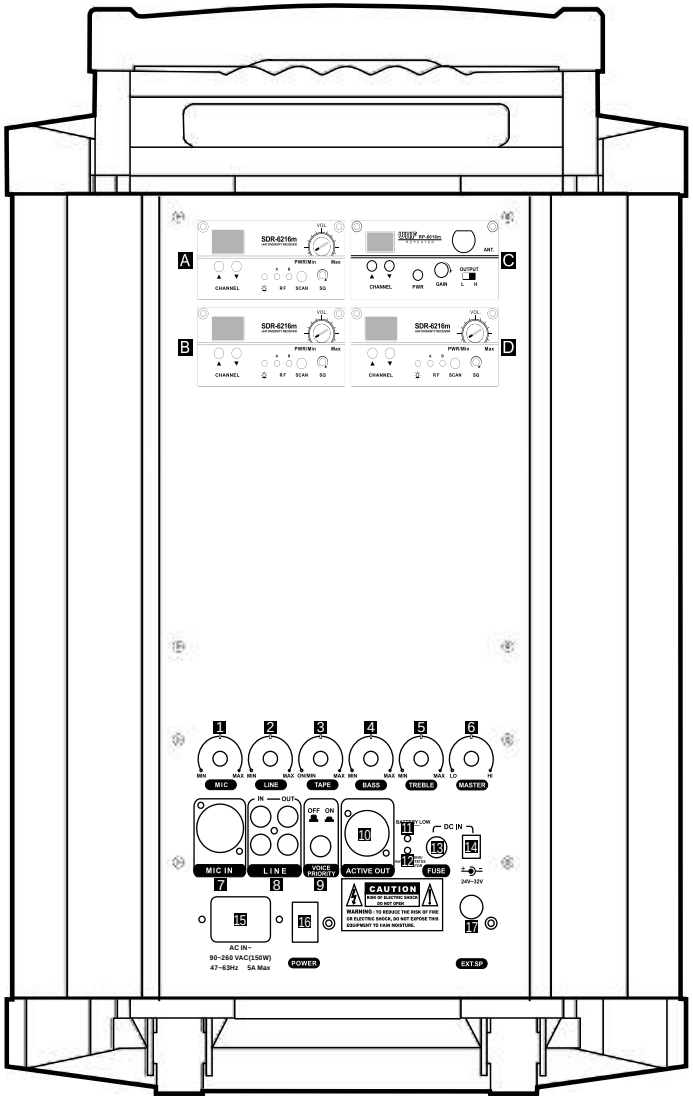
1. Before making any channel change on transmitters, please switch off the power supply. The
   synthesized program works in such a way that a change of channel will only take place after a power off and on action. Otherwise, the previously selected frequency will stay unchanged.
2. After making a channel change, please make sure that the corresponding change is made on the matching receiver as well. To be exact, changes MUST be made at both the transmitter and receiver.
3. The audio cable of VHF transmitters also serve as antenna. The length of the cable is cut according to the specific frequency range. Do not alter the length or mix around the cable of different transmitters. The use of wrong audio cable will affect the antenna efficiency of the transmitter!
4. Position the receiver such that it has the least possible obstructions between it and the transmitter. Line of sight is best !
5. The transmitter and the receiver should be as close as possible but not less than 1m.
6. A receiver cannot receive signals from two or more transmitters simultaneously.
7. Turn the transmitter off when it is not in use. Remove the batteries if it is not to be used for a period of time.

FCC Caution

To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could avoid the user's authority to operate this equipment. (Example - use only shielded interface cables when connecting to computer or peripheral devices.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1)This device may not cause harmful interference, and
(2)this device must accept any interference received, including interference that may cause undesired operation.

Challenger 1000 (Master)
(Basic configuration)

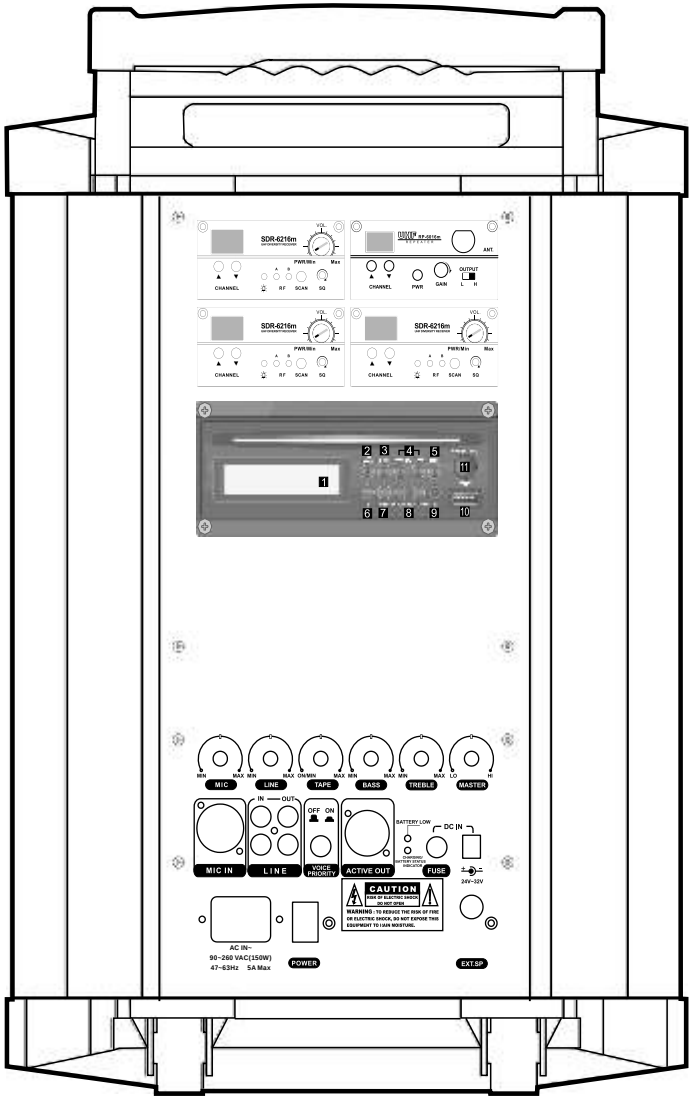


A,B&D. Receiver modules
C. Transmitter module

1. MIC IN.
2. LINE-IN VOL.
3. TAPE CONTROL
4. BASS
5. TREBLE
6. MASTER VOL.
7. MIC IN
8. LINE IN / OUT
9. VOICE PRIORITY
10. ACTIVE OUT (MASTER OUT)
11. BATTERY LOW LED
12. CHARGING INDICATOR
13. FUSE
14. 24~32V DC-IN
15. AC-IN
16. POWER
17. EXT.SP

Fig. 1

Challenger 1000 (Master)
(CD / USB Player version)



1. LCD DISPLAY
2. PLAY/PAUSE
3. STOP
4. SKIP
5. EJECT
6. CD SELECTOR
7. USB SELECTOR
8. FOLDER SKIP
9. IR LED
10. USB INPUT
11. POWER/VOL.

CD player
remote control.

Fig. 2

Making changes to various settings in GMW-216

1. Changing CHANNEL / FREQUENCY:
Use UP or DOWN button to go to the CHANNEL / FREQUENCY page.

The cursor will flash to allow changes to be made. Pressing UP or DOWN button will increase or decrease the channel number. The corresponding frequency will change accordingly. When a desired channel(frequency) is being selected, it will be automatically saved and stored in the memory.

Remark : When changing transmitter frequencies, user should take care not to cause interference to other channels / users.

2. Changing Battery selection:
Use UP or DOWN button to go to the Battery selection page.

Press SET for about 2 seconds to activate the cursor. Press UP or DOWN button to move the cursor to either NiMH (rechargeable battery) or AKLN (Alkaline battery) position.

When the desired option has been selected, press SET for about 2 seconds to save and store the data in the memory.

Remark : Do not connect the adaptor when AKLN batteries are being used. Wrong selection of battery will cause battery sensing electronics to display wrong information and mislead charging status.

Application
GMW-216 is compatible with any of CHIAYO's UHF 16-channel receivers and portable PA system whichever is equipped with built-in 16/100- channel wireless receiver module. Besides handheld and beltpack types, it is another stylish hands free alternative.

Gooseneck Transmitter **GMW-216(UHF)**

1. Gooseneck microphone input
2. LCD display
3. UP button
4. DOWN button
5. SET button
6. TALK button: Push to talk, for short speaking.
7. LOCK button: Switch of long/temporary speaking.
8. POWER on/off LED
9. POWER on/off switch
10. Gain control: User can rotate the knob until a desired acoustic quality is reached .
11. Audio output connector.
12. DC in/charging port
13. Battery compartment

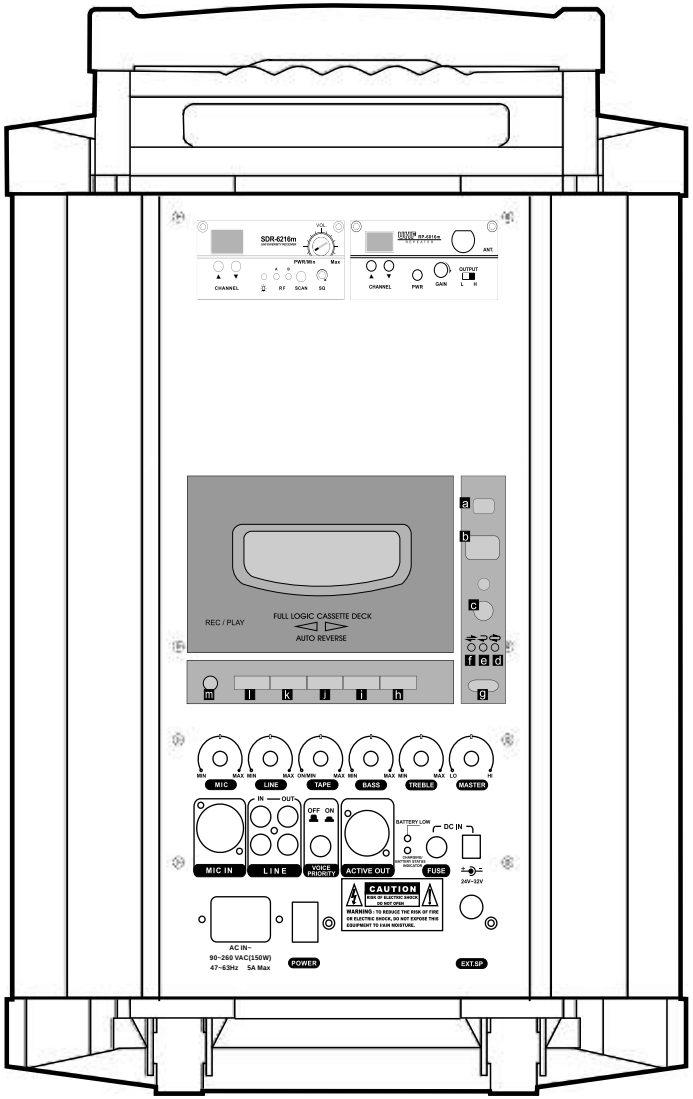
Standard Configuration

1. **GN-43** Gooseneck microphone (43cm) + base
2. 3V DC/500mA charging adaptor

Optional Items

1. NiMH battery (1.2V / 2600 mAH)
2. **GN-30** gooseneck microphone (30cm)

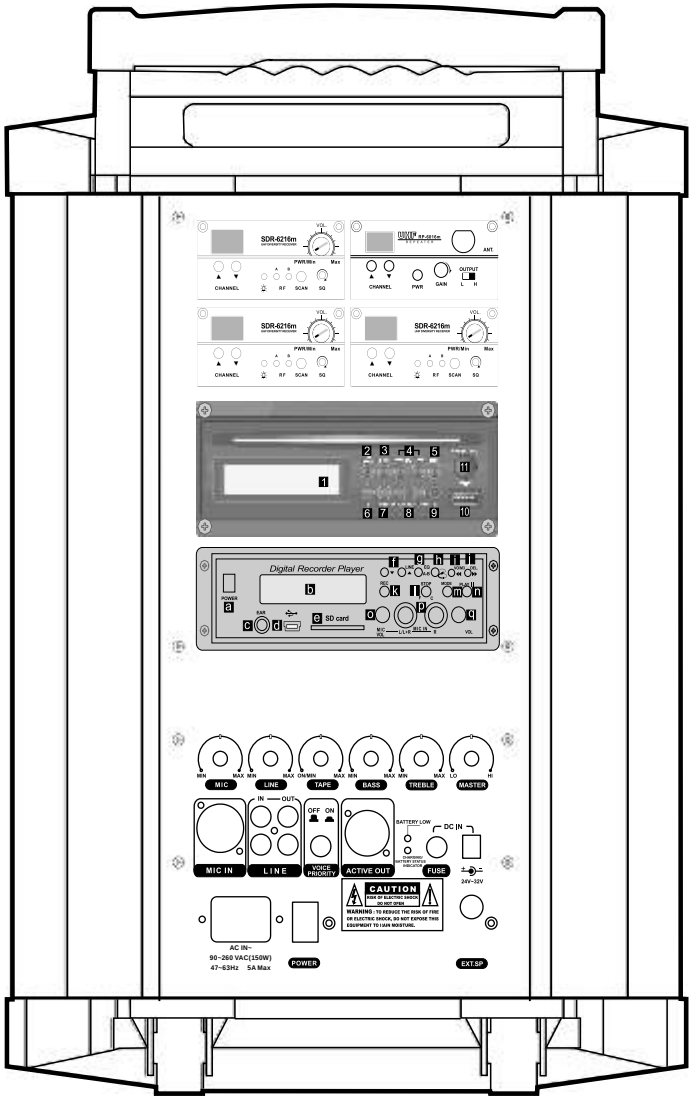
Challenger 1000 (Master)
(Tape Deck Version)



a. EJECT KEY
b. COUNTER
c. VARIABLE SPEED CONTROL
d. AUTO REVERSE INDICATOR
e. SINGLE REVERSE INDICATOR
f. SINGLE SIDE INDICATOR
g. MODE SELECTOR
h. FAST FORWARD
i. FORWARD PLAY
j. STOP
k. REVERSE PLAY
l. FAST REVERSE
m. REC

Fig. 3

Challenger 1000 (Master)
(CD / USB Player & Digital Recorder version)



a. POWER
b. LCD DISPLAY
c. EAR
d. USB
e. SD CARD SLOT
f. LINE▲▼
g. EQ
h. REPEAT
i. REWIND
j. FORWARD
k. REC
l. STOP
m. MODE.
n. PLAY ll
o. MIC VOL
p. MIC IN
q. VOL

Fig. 4

Beltpack Transmitter **SM-316(VHF)**

Battery installation

SM-316 use a 9V battery. To insert the battery, first open the battery compartment cover by pressing the cover downward till the door flips open by itself (see below picture). When installing the battery, please beware of correct polarity. To put back the cover of the battery compartment, one has to press the cover in upward direction until it is locked.

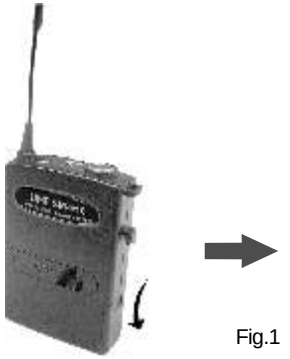
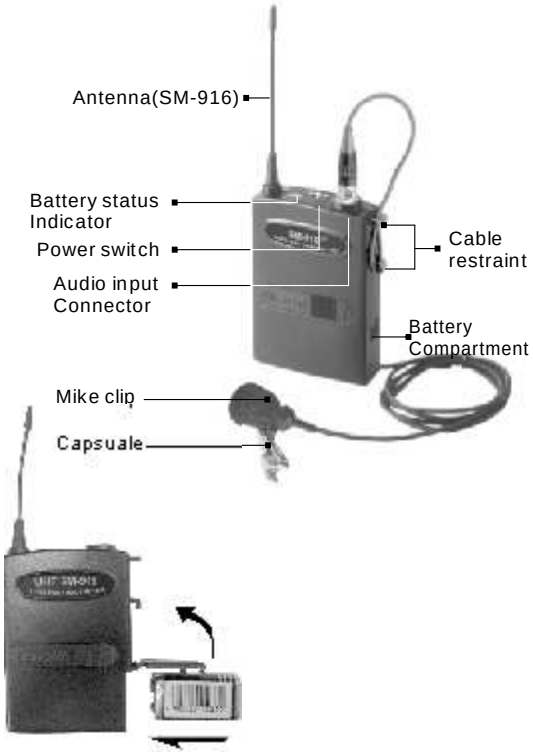


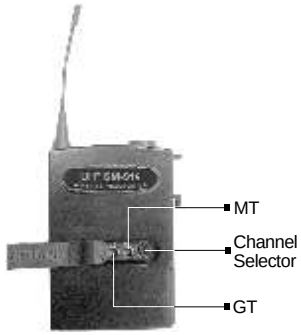
Fig.1



Channel selection and gain adjust

Channel selector and gain adjust are hidden in the designated cover of the front as illustrated. To make channel selection and gain adjust, please press the designated cover and flip it open as illustrated.
Channel selection can be made by rotating the selector with a small screw driver.

Gain adjust for Lavalier and Headset microphones can be done by adjusting the MT switch, whereas GT switch is for the gain adjust of electric Guitar and other high- impedance line level inputs.



Beltpack Transmitter **SM-816(UHF) / SM-216(VHF)**

Battery installation
This transmitter uses 3 pieces of " AA " size batteries (Alkaline battery is recommended). To install or remove the batteries, press the release buttons at the edges of the transmitter to open or close the cover as illustrated (Fig.1).

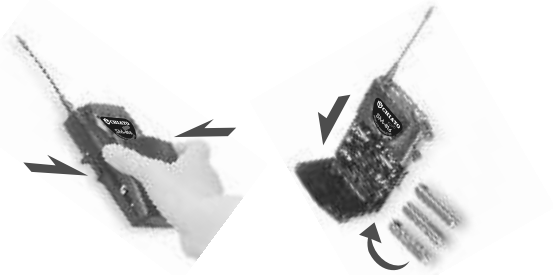


Fig.1

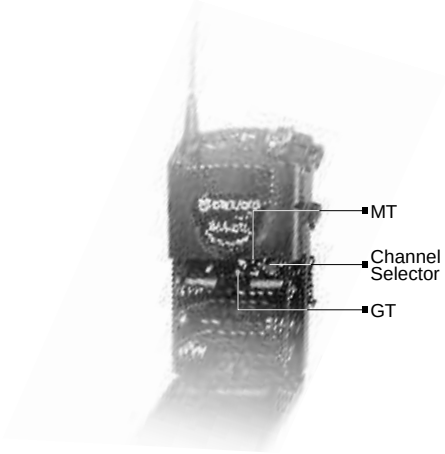
Beltclip installation
This specially designed detachable beltclip allows the user to wear the transmitter with antenna pointing upward or downward as illustrated. To wear the transmitter with the transmitter pointing upward, install the belt-clip as in Fig.2. To wear the transmitter with the antenna pointing downward, please install the belt-clip as in Fig.3.

Fig.2

Fig.3

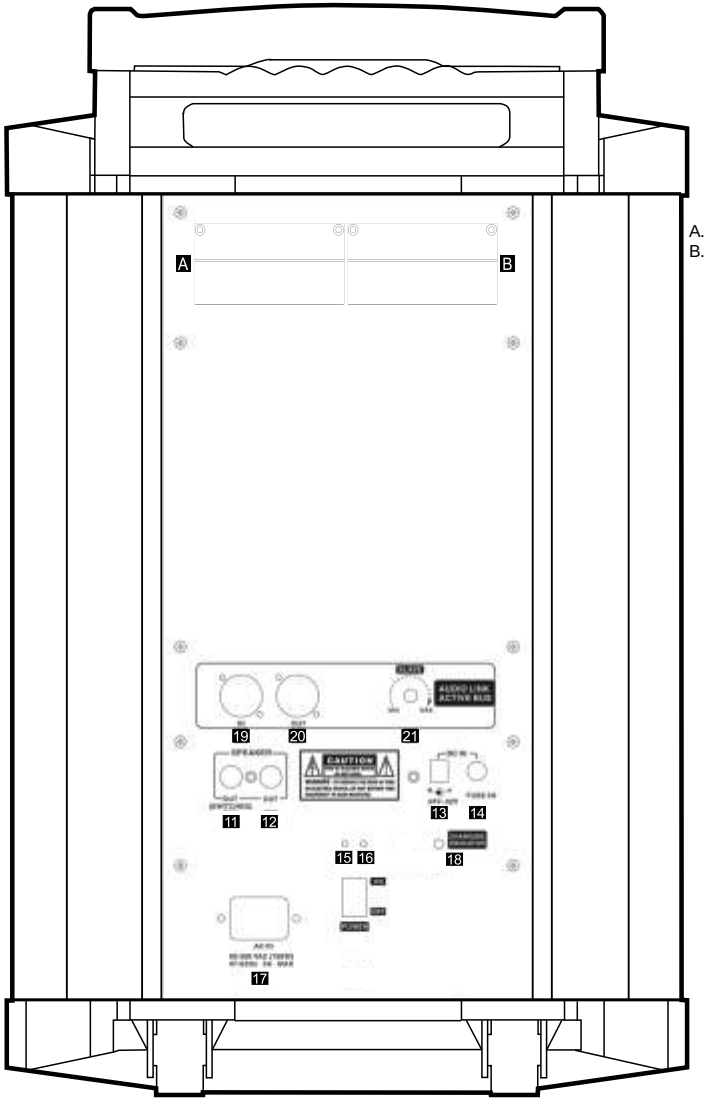
Channel selection and gain adjust
Channel selector and gain adjust are hidden in the designated cover of the front as illustrated.
To make channel selection and gain adjust, please press the designated cover and flip it open as illustrated. Channel selection can be made by rotating the selector with a small screw driver.

Gain adjust for Lavalier and Headset microphones can be done by adjusting the MT switch, whereas GT switch is for the gain adjust of electric Guitar and other high-impedance line level inputs.



Challenger Slave

The Challenger Slave is an active (powered) speaker unit with built-in switching power supply as well as rechargeable batteries, complete with similar charging circuit as that of the Challenger 1000 Master unit.
It is an extended and indispensable member of the Challenger Audio Link system.



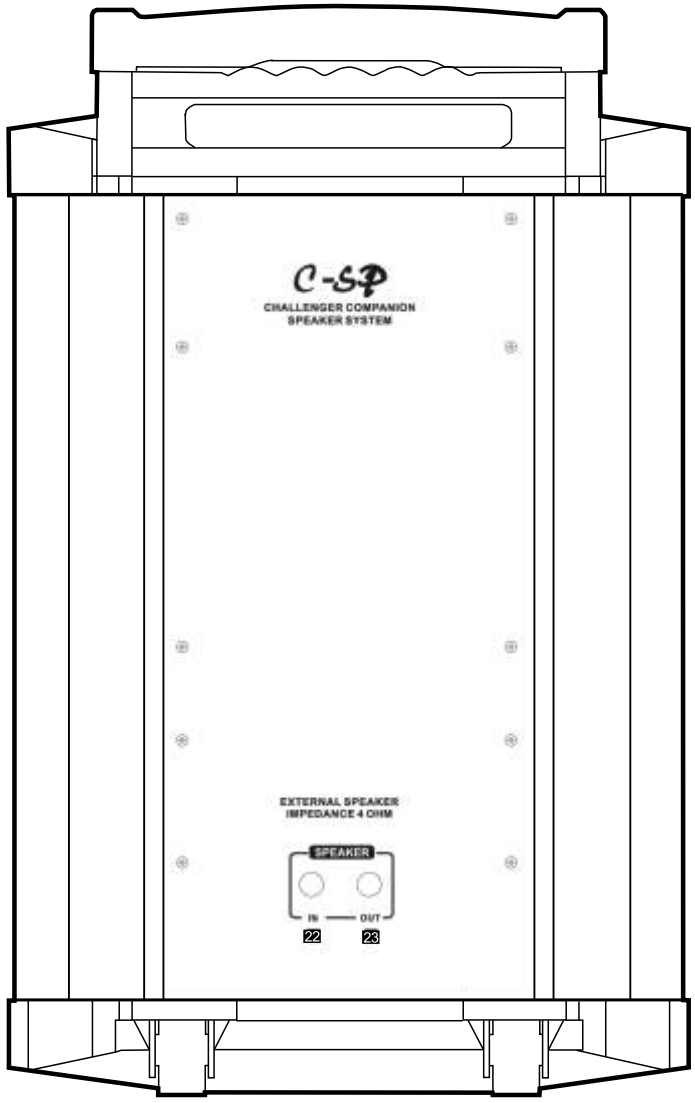
A. Slot for receiver module
B. slot for receiver/transmitter module

11. SPEAKER OUT (SWITCHED)
12. SPEAKER OUT
13. 24-32V DC INPUT
14. FUSE
15. BATTERY LOW INDICATOR
16. BATTERY STATUS INDICATOR
17. AC INPUT
18. CHARGING INDICATOR
19. SLAVE IN
20. SLAVE OUT
21. SLAVE VOL.

Fig. 5

Challenger Speaker (C-SP)

The Challenger Speaker is a passive companion speaker for the Challenger 1000 series.
It is for connection to the switched or unswitched speaker outs of the Challenger 1000 (Master) or the Challenger Slave units.



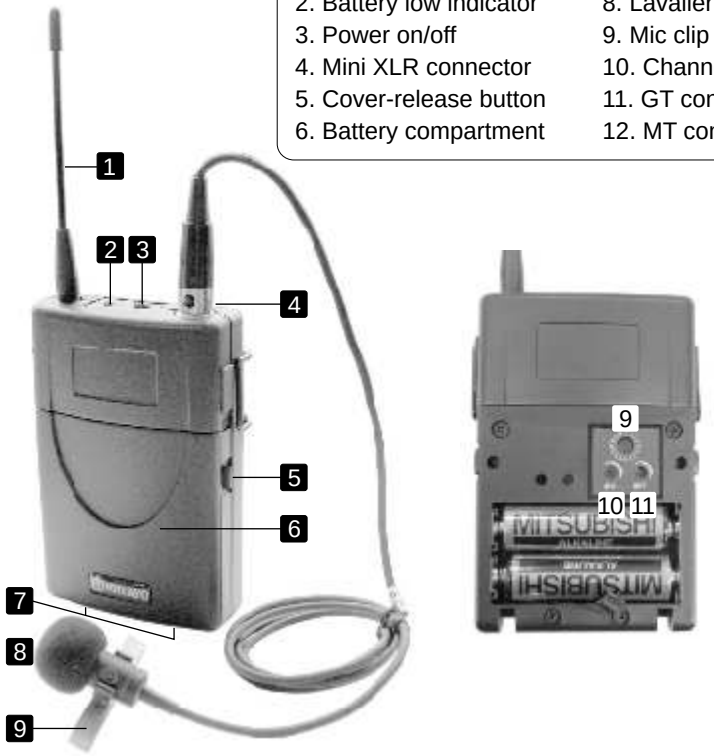
22. SPEAKER IN
23. SPEAKER OUT

Fig. 6

UHF Beltpack Transmitter **SM-1016**

Parts and functions

1. Antenna
2. Battery low indicator
3. Power on/off
4. Mini XLR connector
5. Cover-release button
6. Battery compartment
7. Charging contacts
8. Lavalier microphone
9. Mic clip
10. Channel selector
11. GT control
12. MT control



Battery Installation

SM-1016 uses 2 pieces of " AA " size batteries (Alkaline battery is recommended).
To install or remove the batteries, press the release buttons(5) at the edges of the transmitter to open or close the cover.
Please remove the batteries if SM-1016 is going to be unused for over a couple of days. Just place them back to the compartment when you are using it next time.

Channel selection and gain adjust

Channel selector and gain adjust are hidden in the battery compartment.
Channel selection can be made by rotating the selector with a small screw driver.

Gain adjust for Lavalier and Headset microphones can be done by adjusting the MT switch, whereas GT switch is for the gain adjust of electric Guitar and other high-impedance line level inputs.

Making changes to various settings in SM-5016

1.Making changes to CHANNEL / FREQUENCY:
Use UP or DOWN button to go to the CHANNEL /FREQUENCY page.

The cursor will flash to allow changes to be made. Pressing UP or DOWN button will increase or decrease the channel number. The corresponding frequency will change accordingly. When a desired channel(frequency) is being selected, it will be automatically saved and stored in the memory.

Remark : When changing transmitter frequencies, user should take care not to cause interference to other channels / users.

2.Making changes to Battery selection:
Use UP or DOWN button to go to the Battery selection page.

Press SET for about 2 seconds to activate the cursor. Press UP or DOWN button to move the cursor to either NiMH (rechargeable battery) or AKLN (Alkaline battery) position.

When the desired option has been selected, press SET for about 2 seconds to save and store the data in the memory.

Remark : "NiMH" must be selected when rechargeable battery is being used. Never select "AKLN" (Alkaline) when transmitter is intended for charging as Alkaline battery can not be charged ! Wrong selection of battery will cause battery sensing electronics to display wrong information and mislead charging status.

3.Input Level Gain Control Adjustment
Low impedance (Lo-Z) " MT" & high impedance (Hi-Z) " GT" gain controls are situated inside the transmitter. Gain controls are adjustment ports that enable you to use microphones of differing output levels and Guitar or instruments with Hi-Z output. To adjust microphone (Lo-Z) input levels, turn the "MT" control and to adjust the Guitar or instrument (Hi-Z) input, adjust the "GT" gain control to set the transmitter's desired audio input level.

Operating procedures

After unpacking the unit for the first time, please charge the unit for about 4-5 hours before any operation. This is absolutely necessary as the built-in rechargeable battery might have been discharged naturally due to long shipment and storage time, even though it has been fully charged in the factory prior to shipment.

To operate this portable sound unit, switch on the main POWER switch, the GREEN LED above it will glow. However, if the RED LED also glows at the same time, it means the battery is getting weak and a recharge of the battery is necessary.

The main POWER switch does NOT switch on the Wireless receiver module and Tape/CD Player/Digital Recorder as each of them has dedicated Power / Volume control switch on its panel. To operate each of them, you must switch them on accordingly.

Operating the dynamic wired microphone.

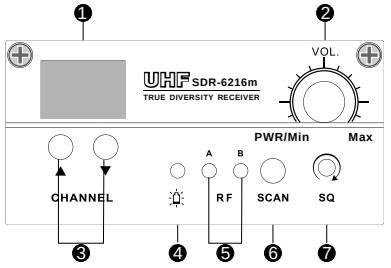
To use a cable microphone, simply plug it into any MIC IN socket. The mic sockett accepts both phone and Cannon jack. Rotate the dedicated volume control knob and master volume control, amplified sound could be heard from the speaker when voice is spoken into the cable microphone.

When a full range high fidelity sound is emphasized, the mode selector (3) should be put to MUSIC. For vocal frequencies where better clarity and projection is emphasized, put the mode selector to SPEECH and this will produce more mid-range frequency.

Operating the Wireless Microphone System.

To operate the wireless system, just switch on the power/volume control on the module panel and the matching transmitter. Please have the channel setting on both the transmitter and receiver module be the same before operation. Please as well make sure that master volume control is set to minimum level before turning the unit on, especially working on a wireless version! Set the Master volume control to the mid position. Rotate the volume control knob on receiver panel clockwise to the desired levels. When voice is spoken into the microphone, amplified sound should be heard over the built-in speaker.

SDR-6216m/SDR-6116m receiver modules



1. Channel Indicator
2. Power switch/volume control
3. Channel Selector
4. Transmitter battery weak indicator
5. Diversity A/B Indicator
6. SCAN
7. Squelch control

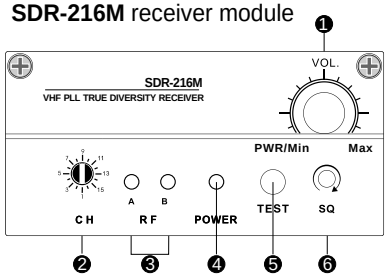
First turn on the Power of the main unit. Then turn on the individual power of the SDR-6216m/ SDR-6116m receiver module. Select a desired channel by pressing the ? or ? button and the corresponding channel on the Transmitter.

When transmitter is turned on, either A or B diversity indicator will flash to indicate that signal has been received. Turning the volume control in clockwise direction can increase the audio output. Once the power volume on the transmitter is too low, the LED indicator (4) on this panel grow will grow to remind.

Frequency scanning
It is the automatic scan function key. To perform the scan function, the transmitter must be switched off. Once the key is being pressed, the unit will do an auto scan and the next clean channel will be displayed. Change the transmitter channel setting to this setting for an interference- free operation.

Squelch(SQ) setting
When a channel is in use and undesired interference signal is received, turn the SQ in clockwise direction to make the receiver less sensitive and thus less susceptible to interference. If this still does not solve the problem, it means this frequency is not applicable at current position. Please switch over to the next channel.

SDR-216M receiver module



1. Power switch/volume control
2. Channel selector
3. Diversity A/B Indicator
4. Power-on LED
5. TEST
6. Squelch control

First turn on the Power of the main unit. Then turn on the individual power of the SDR-216M receiver module. Select a desired channel by pressing the ? or ? button and the corresponding channel on the Transmitter.

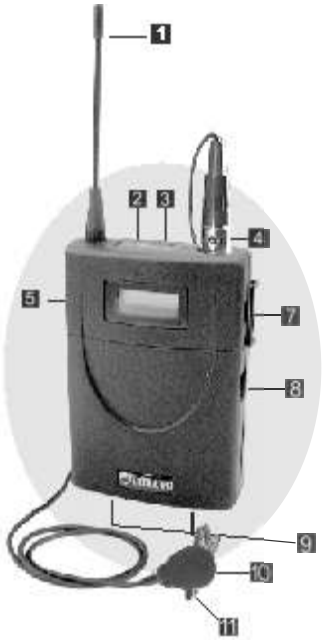
Switch on the corresponding transmitter. RF or Diversity indicator A or B will light up when both are of the same channel. The movement of the transmitter causes diversity indicator A or B to light up alternately. When both transmitter and receiver are on, speak into the microphone and rotate the separate volume control and main unit volume control, amplified sound could be heard from the speaker.

Squelch(SQ)setting
When interference occurs, turning the SQ switch in clockwise direction can make it diminish or disappear completely.

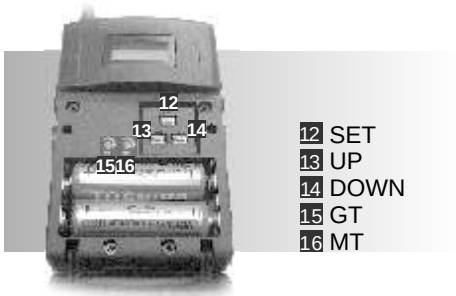
Frequency testing
However if interference noise persists even though SQ is at max. position, then switch to another channel and press the TEST button. When neither RF A nor B indicator light up, then this particular channel is considered clean. The corresponding transmitter channel setting must also be changed accordingly to match the receiver selection.

UHF Beltpack Transmitter **SM-5016**

Parts & Functions



1 Antenna
2 Battery weak / audio mute indicator
3 Audio mute switch
4 Mini-XLR connector
5 Power ON / OFF switch
6 LCD display
7 Charging port
8 Cover release button
9 Charging contacts
10 Lavalier microphone
11 Mic clip



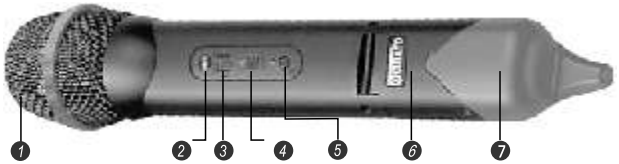
12 SET
13 UP
14 DOWN
15 GT
16 MT

Battery installation

SM-5016 uses 2 pieces of " AA " size batteries (Alkaline battery is recommended). To install or remove the batteries, press the release buttons at the edges of the transmitter to open or close the cover as illustrated below.

VHF Handheld Transmitter **SQ-316**

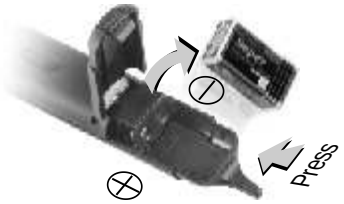
Parts & functions



1. Capsule with metal grille
2. Battery indicator
3. Sensitivity switch
4. Power on/off switch
5. Battery cover
7. Color cap

Battery installation

SQ-316 use a 9V battery for power. To change or replace the battery, please remove the color cap first, then press the bottom of battery compartment to release the cover as shown below.



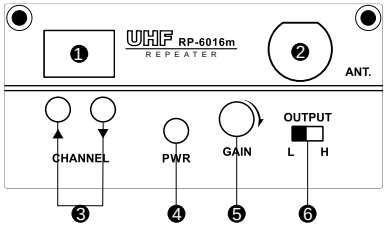
Sensitivity switch

This microphone has a sensitivity switch, For close mouth singing or normal speech, please put the switch to L (Low) position. For tripod-mount speech, please put the switch to N (Normal) position.

■ Low Sensitivity

■ Normal Sensitivity

RP-6016 Transmitter module



1. Channel indicator
2. Antenna socket(TNC type)
3. Channel selectors: Press ▲ (up)▼(down) to increase/decrease channel number. Please select a **non-interfering frequency channel** to those used in the receiver modules.
4. Power on/off
5. Audio sensitivity: Clockwise to increase its sensitivity level and anticlockwise to reduce.
6. Output power switch. L for LOW output power and H for high output power. LOW output power will reduce the RF transmission distance and HIGH output power will extend the possible RF transmission distance.
   However, if RP-6016m is installed in portable amplifiers, HIGH output power will reduce more operation time than LOW output power since it requires more power for longer RF transmission.

Operation of system with CD / USB Player.

This operation is valid for version of Challenger 1000 with built-in " CD / USB Player" To operate, push the Power/Vol button to turn on the player. The LCD panel on the player will be lighted up and normal operation is ready. To insert a CD, just push it into the CD slot and the mechanism will suck it in automatically.

Rotate the volume control knob to adjust the volume of the player. For Bass and Treble setting, adjust the individual Bass and Treble controls.

For more details, please refer to the instruction on " CD / USB Player" controls and functions.

Operation of system with Digital Recorder.

This operation is valid for version of Challenger 1000 with built-in " Digital Recorder "

To operate, first turn on the Master power switch and then press the designated power button of this module. The LCD display will be lighted up and Volume setting can be done by rotating the knob. For Bass and Treble setting, adjust the designated controls respectively.

For more details, please refer to the instruction of " Digital Recorder " controls and functions.

Operation of system with Tape Deck.

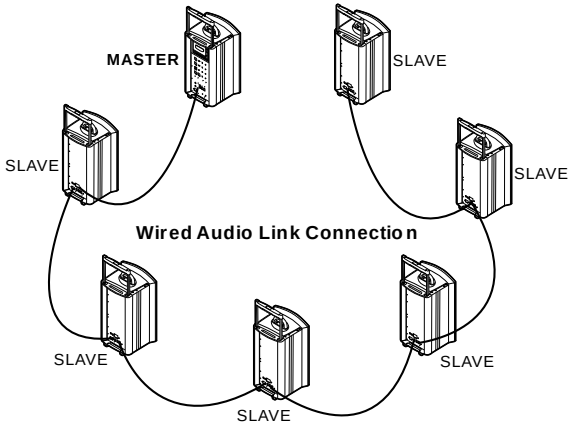
This operation is valid for version of Challenger 1000 with built-in " Tape Deck ".Rotate the volume control knob of the TAPE / CD control to adjust the volume of the Tape deck. For Bass and Treble setting, adjust the designated controls respectively.
For more details, please refer to the instruction of " Tape Deck " Controls and functions.

Voice Priority (Ducking) operation

Voice Priority operation is only necessary when Cassette tape or CD is playing. When the Voice Priority switch (9) is put to ON position, the ducking function will be activated. While the music is playing, a voice input from either a Wired or Wireless Microphone will temporary override and turn down the volume of the background music and voice could be heard clearly.

Background music will return to its original setting when no audio input is entering the microphone for a certain time. However, if the microphone is not switch off, the reentering of music into the microphone will also activate the voice priority function. So, Voice priority is best operated using microphones with on / off switch.
However, in an aerobic operation, Voice Priority should NOT be activated !

Wired Audio Link



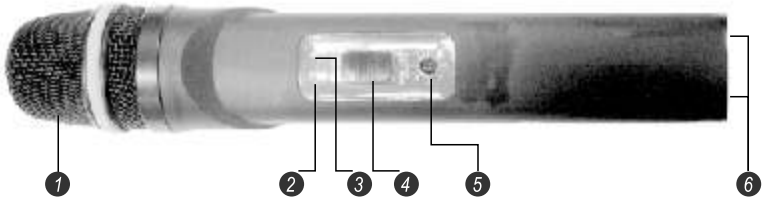
The Challenger 1000 could be operated as MASTER only. The Challenger Slave can only be operated as SLAVE.

In order to operate Audio Link, you must have a Challenger 1000 unit that operates as a MASTER. Only one unit is allowed to act as MASTER and the other(s) MUST operate as SLAVE(s). A MASTER unit is capable of connecting up to about 20 SLAVE units.

To operate Audio Link, connect the Active Out (10) of the MASTER to the Audio Link IN (19) of the 1st SLAVE unit. The Out (20) of this SLAVE should be connected to the IN jack (19) of the 2nd SLAVE unit. Similar connection shall continue as such for the following SLAVE units.

Handheld Transmitter **SQ-816(UHF) / SQ-216(VHF)**

Parts & functions



1. Capsule with metal grille
2. Battery normal indicator (Green)
3. Battery low indicator (Red)
4. Power on/off switch
5. Channel switch
6. Charging port

Battery installation

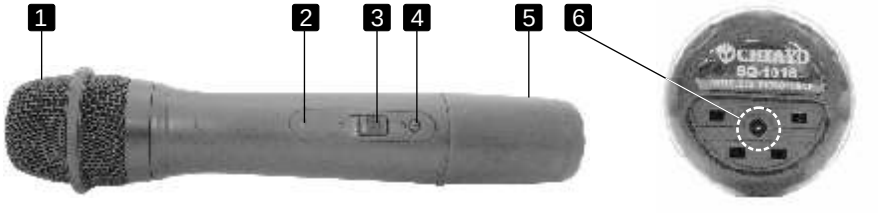
SQ-816/SQ-216 transmitter requires 3 pieces of " AA " size battery to operate. Please insert the batteries according to the correct polarity as indicated. To open the battery compartment, press and slide down the cover until it clicks and locks. Further sliding movement will remove the cover.

CHIAYO

UHF HANDHELD MICROPHONE **SQ-1016**

Parts and functions

1. Mic capsule module
2. Battery low indicator
3. Power on/off
4. Channel selector
5. Battery compartment
6. Charging port



Changing mic capsule & Battery installation

First unscrew the metal grill from the housing, take out the capsule and then replace it with a new one. Either dynamic or condenser type can be chosen to fit your requirement for any application.

SQ-1016 uses 2 pieces of " AA " size batteries (Alkaline battery is recommended).
To install or remove the batteries, rotate its battery compartment from the housing and then place the batteries into it according to correct polarity.
Please remove the batteries if SQ-1016 is going to be unused for over a couple of days.
Just place them back to the compartment when you are using it next time.

Changing channels

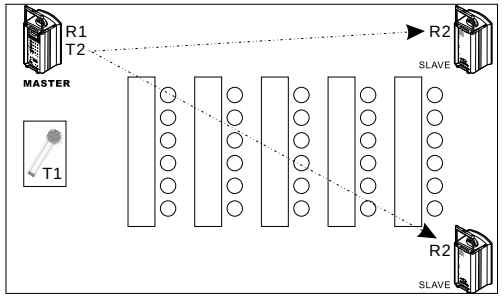
Channel selection can be made by rotating the selector(4) with a small screw driver. User can easily tell which channel has been chosen by referring to the number above the selector.

Volume Control (6) for MASTER or (21) for SLAVE.
When used on the MASTER, it controls the MASTER as well as all the SLAVE units.
When used on the SLAVE unit, it only controls that particular SLAVE unit volume.
Maximum number of SLAVE units to be connected with a MASTER is about 20.

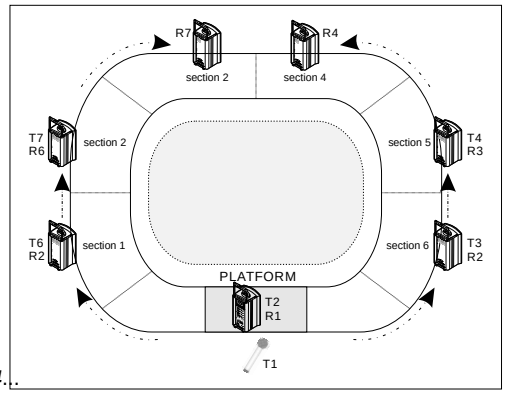
Wireless Audio Link
Different from Wired Audio Link, with new SLAVE's capability of installation of receiver and transmitter modules it eliminates all cable connection and largely extends the number limit of SLAVEs.

One Master + several SLAVEs (with receiver and transmitter modules built in) : For crowds of over 3000.

Application: For crowds of 1000 to 2000, ex.speeches or forums.
Configuration: One Master + several SLAVEs (with receiver module built in)



Application: For crowds of over ex.stadiums.
Configuration: One Master + several SLAVEs (with receiver and transmitter module built in)

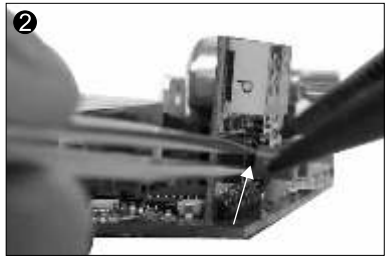


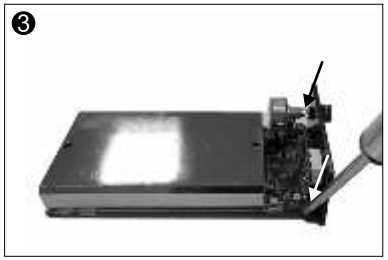
T:Transmitter **R**: Receiver Channel:**1**,**2**,**3**,...
T1 matches **R1**, ***T2*** matches ***R2***, ***T3*** matches ***R3***, ***T4***...

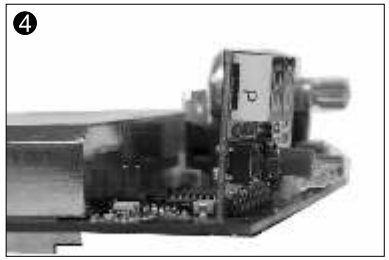
Battery Charging
Internally, the Challenger 1000 contains 2 pcs of 12V / 5AH maintenance free lead acid battery, which has no memory effect.
When the batteries are weak, the power indicator (11) LED will keep lighted still. To charge the batteries, simply plug in the AC power supply, the charging process will start automatically. While charging, the charging indicator (12) will flash GREEN.
When batteries are fully charged, the charging indicator (12) will keep lighted GREEN.

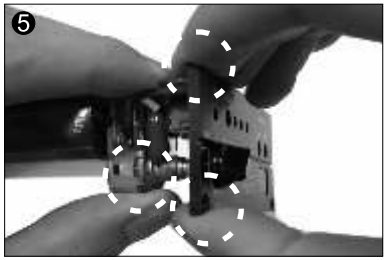
External speaker (17)
For audio output connection to another speaker system.

Replacement of the covers of receiver module
To identify different matches of receiver and transmitter, there are 4 extra sets of button covers with different colors available for replacement.









STEP 1: Adjust the PWR/VOL knob to OFF position. After the replacement is completed, just put it back accordingly.
STEP 2: Screw off the panel.
STEP 3: Separate the panel and the board as demonstrated.
STEP 4: Use clamps to hold the button and remove the cover.
STEP 5: Repeat **STEP 4** to remove the other 2 covers. When the replacement is complete, please assemble the module reversely.
REMARK:
This procedure is strongly recommended to be operated by technician of importer or dealer.

Making changes to various settings in SQ-5016

1.Making changes to Channel:
Use UP or DOWN button to go to the CHANNEL/ FREQUENCY page. The cursor will flash to allow changes to be made. Pressing UP or DOWN button will increase or decrease the channel number. The corresponding frequency will change accordingly. When a desired channel is selected, it will be automatically saved and stored in the memory.

2. Making changes to Battery selection:
Use UP or DOWN button to go to the Battery selection page.

Press UP or DOWN button to move the cursor to either NiMH (rechargeable battery) or AKLN (Alkaline battery) position.

When the desired battery has been selected, it will be automatically saved and stored in the memory.

Remark : "NiMH" must be selected when rechargeable battery is being used. Never select "AKLN" (Alkaline) when transmitter is intended for charging as Alkaline battery can not be charged ! Wrong selection of battery will cause battery sensing electronics to display wrong information and mislead charging status.

3. Making changes to Sensitivity Level:
Use UP or DOWN button to go to the SENS SET page.

Press UP or DOWN button to increase or decrease the Sensitivity Level of the transmitter. The MAX level is 4 and the MIN level is 1.

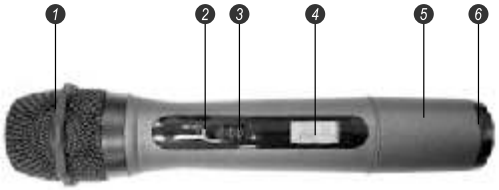
When a desired sensitivity level has been selected for your application, it will be automatically saved and stored in the Memory.

Remark : When selecting Sensitivity level, please keep in mind that Level 1 is for close proximity singing purposes whereas Level 4 is for use of transmitter on tripod mount for speech purposes. When Level 4 setting is used for close proximity singing, high SPL input will result in undesirable distortion in the output.

After performing setting changes, you could turn the protective cover 180° in either direction to block the buttons from being accidentally adjusted.

UHF Handheld Transmitter **SQ-5016**

Parts and functions



1. Microphone capsule module
2. Battery status LED
3. ON/OFF switch
4. LCD
5. Battery compartment
6. Rotating protective cap for controls (also serves as color identification cap)
7. Lock / Unlock
8. Set
9. Up
10. Down
11. Charging port
12. Name plate

Changing of capsule

First unscrew the metal grill from the housing and take out the capsule to be replaced. Then insert a new capsule. Either dynamic or condenser type can be chosen from location to location.

Battery installation

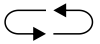
SQ-5016 microphone requires 2 pieces of " AA " size batteries to operate. Please insert the batteries according to the correct polarity as indicated.

Caution

Many batteries are known to have leakage problem of conductive and corrosive liquid. Please observe the rule to remove the batteries if they are not to be used for a longer period.
Due to various unstandardized sizes (diameters) of " AA " batteries, this battery compartment is designed to accommodate the most common Alkaline batteries only.

Operating the Tape Deck

To begin operation switch on the TAPE Power after the main power of Challenger 1000 has been turned on.

Keys	Functions
FF Fast Forward	Press this key for fast forward .
FP Forward Play	Press this key for play in forward direction.
Stop	Press this key to stop the tape.
RP Reverse Play	Press this key for play in reverse direction.
FR Fast Reverse	Press this key for fast reverse.
Record	Press this key together with FP or RP key for recording.
Mode selector	This key is pressed to select one of the following three modes.
	Active in Forward nor Reverse direction, the cassette tape will play to the end and stop automatically. This mode may be used for Record and Play.
	The cassette tape will play to the end, stop, reverse direction to the end of the second side and stop. This mode may be used for Record and Play.
	This mode provides continuous " Play " operation. It is not operable in Record mode, however, it will record one complete cycle if the recording is begun in the Forward direction.
Speed Control	Normal tape speed at center position. Clockwise direction increases tape speed. Counter-clockwise direction reduces tape speed.
Eject	This key is pressed for ejecting the tape.

Rotate the volume control knob (8) of the TAPE control panel to adjust the volume of the Cassette deck. For Bass and Treble setting, adjust "TREBLE"(9) and "BASS"(10) knobs.

Operating the CD / USB Player

Front remotable is an unique feature of Challenger 1000. User can easily control this CD player by clicking its remote from both front and rear Challenger 1000.
To begin operation switch on the CD Power after the main power of Challenger 1000 has been turned on.

Keys	Functions	Panel	Remote
PLAY/ PAUSE	When this key is pushed during CD stop, play will start after track search. When this key is pushed during CD is playing, then it is changed to pause. When this key is pushed during CD is pausing, then it is changed to play.	V	V
STOP	When CD is not stop, if this key is pushed then CD will stop.	V	V
CD	When press this key will change to cd-mp3 mode.	V	V
USB	When press this key will changed to USB mode.	V	V
SKIP+ UP/CUE	**In stop mode:** Change the starting play track(file) during stop mode, cyclic to the first track, if it is in the last track. **In program entry mode:** Change to the next track(file) for program select . **In play mode, pause mode, program play mode, random play mode:** Single pressed, skip the playing track(file) to next track(file) for normal play/pause mode, to next program index track(file) for program play/pause mode, to next random track(file) for random play /pause mode. Continue pressed , fast forward during play/pause when pressed more than 0.7sec.	V	V
SKIP- DONW/REV	**In stop mode:** Change the starting play track (file) during stop mode, cyclic to the last track, if it is in the first track. **In program Entry mode:** Change to the previous track (file) for program select. **In play mode, pause mode, program play mode:** Single pressed, skip the playing track (file) to precious track(file) for normal play/pause mode, to previous program index track(file) for program play/pause mode. Continue pressed, fast reverse during play/pause when pressed more than 0.7sec.	V	V
FOLDER-UP	In stop mode: Skip the starting play folder to next folder during stop mode, cyclic to the first folder if it is in the last folder. In program entry mode: Change the file for program select to next folder's first file, cyclic to the first folder if it is in the last folder. In normal play mode: Skip the playing file to the next folder's first file.	V	V

9. Please use the one with cooperate specification (marks on the back of the machine).
Please turn off the power when you do not use the machine for a period of times.
* To keep stable data transmission, please do not twist the USB cable during data transmission.
* Please do not press the LCD monitor heavily, or touch it with finger or sharp articles.
* Please prevent water leak into the machine.

10 . The SD card is a very precise electronic part, please use it according to the following notice:
*To prevent taking the SD card out of the machine during data transmission.
*Do not bend, strike, drop or take apart the SD card.
*To prevent to place the SD card in a high temperature, high humidity, dusty place, or a place full with static electricity.
*Please make sure the SD card you are using has been format.
*Make sure the write protection switch of the SD card is released when you are recording .
*Our product will process large amount of messages during recording and playing, we strongly suggest you to use high speed SD card as extension memory card, to prevent noise, data lose or any transmission problem.

*** We have tested and approval the following brands of SD card for our machine, they are:**
Toshiba SD-M51225R2W 512MB
Apacer SD 120X 1GB
Apacer SD 256MB

11. We do not guarantee the function, operation, or life of any SD card is used in our machine. We do not also take any responsibility of indemnity for the damage of SD cards.

12. Same as other digital stock products, user must save the inner documents from time to time. This product will not take any responsibility due to documents lost directly or indirectly damage caused.

5. **MODE** key**------** Push the MODE key with another key for special function selection. The LCD will show "MODE" when push MODE key, you shall push another function key to perform the function. If you does not push another function key within 5 seconds, the machine will back to idle mode. Following is the detail of special function keys.

5-1 **MODE** key +? **(/LINE IN)** key:LCD will show "LINE IN", and select line in audio source as recording source.

5-2 **MODE** key + **A-B(/EQ)** key :For EQ select function. EQ sequence is Normal ? Classic ? Pop ? Rock ? Jazz. (Normal EQ will not be shown on LCD)

5-3 **MODE** key + ◀◀ **(/VOC,/MP3)** key: To select VOC mode (Record from microphone or LINE IN source) or MP3 mode (Download *.mp3 files from PC).

5-4 **MODE** key + ▶▶ **(/Del.)** key : When push these two keys, the LCD will show DEL,you must push ▶▶ **(/Del.)** key again to delete the track. The LCD will show"DEL" until the delete process is finished.

5-5 **MODE** key + ¦ **key :**Change flash and SD card under PLAY and Idle modes.

6. The machine offers extended connectors:

6-1 **EAR :**for earphone
6-2 :USB connector to PC
6-3 SD card:for extended SD memory card,up to 512MB
(When use 512 MB SD card, the recording time is available for over 8 hours)
(If use 1GMB SD card, it will be divided into 99 tracks recording, each track of recording time no more than 9:59:59 will be able to display time function on LCD)
6-4 MIC IN : connect to two microphones

7. **ROTARY VOLUME CONTROL**
7.1 MIC REC. Rotary Volume Control
7.2 Level Rotary Volume Control.

8. **USB CONNECTION :** You can easily copy MP3 files from computer to the machine through USB connection.

A. Install Hardware: Connect the machine and your computer with a USB cable. You computer will recognize a new removable storage device automatically. You can add, delete, copy, and preview files. (If the operation system of your computer is Window 98 or below, you must install USB driver for first use. The USB driver is included.)

B. Store new files to VOC mode: MP3 files on the computer can be stored to VOC mode. However, the file names must be renamed as following format:

B-1 : If you want to store the file to flash memory in VOC mode, you must rename it asM_INT _XX.MP3 (XX stands for track location)

B-2 : If you want to store the file to SD card in VOC mode, you must rename it as M_EXT_XX. MP3 (XX stands for track location) **File format must be MP3 to work.**

C. Store new files to MP3 mode: *mp3 or *wma files on the computer can be stored to MP3 mode, no need to rename the file, it will store to MP3 mode automatically.

E: After completing all operations on computer, please detect the USB connection then to operate the machine.

*** * * NOTICE** : **Please read the following notice before you use our DIGI- REC Series .**

FOLDER-DOWN	In stop mode: Skip the starting play folder to previous folder during stop mode, cyclic to the last folder if it is in the first folder. In program entry mode: Change the file for program select to previous folder's first file, cyclic to the last folder if it is in the first folder. In normal play mode: Skip the playing file to the previous folder's first file.	V	V
PLAY MODE	In mp3 mode and in USB mode . If this key is pushed, PLAY mode is changed cyclically shown below. PLAY ALL RANDOM → REPEAT TRACK → REPEAT FOLDER → REPEAT ALL ← RANDOM REPEAT ← PLAY ALL ← IN CD mode If this key is pushed, PLAY mode is changed cyclically shown below PLAY ALL RANDOM → REPEAT TRACK → REPEAT ALL ← RANDOM REPEAT ← PLAY ALL. ←		V
EJECT	When this key is pushed, door is moved out.	V	V
PROG	Set to programming mode. When programming mode, "stop" key is pushed then program is all cleared.		V
MUTE	When this key is pushed during CD is playing, the set will mute the output. Push again, will recovery the output .	option	V
POWER	Power SW of the set .	V	V
ESP	In CDDA mode, Press"ESP" key , The ESP display lighted and the set is in electronic anti-shock state. The electronic anti-shock time is about 40 seconds. Press "ESP" key again, cancel the ESP function.		V
FIND	In MP3 mode : Press this key once FILE search mode changed . Press this key twice ALBUM search mode changed .If press this key long time once track is displayed .press twice ID3 TAG is displayed.		V V
0~10;	You can use these keys to select the track you want directly.		V
VOL.-	When this key is pushed , the volume will decrease by 1dB per step , the min. volume is 0dB.	ENCODE	V
VOL.+	When this key is pushed, the volume will increase by 1dB per step , the max. volume is 30dB.	ENCODE	V

Caution:
This player does not accept 8-cm diameter CD. User is advised to have the USB 2.0 formatted in " FAT " or " FAT 32 ". The built-in USB 2.0 player can not be able to read the MP3 files stored in your USB if it is not formatted by either " FAT " or " FAT-32 ". To avoid damage to the USB, remember to detach it only after switching off the player.

Operating the Digital Recorder

Product Features :

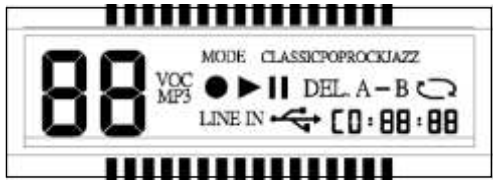
1.Digital record to MP3 compression format
2.Highest sample rate at 44.1KHz, 128Kbps (as CD quality).
3.1 - 99 recording tracks.
4.Equiped with 128MB flash memory for 60 min. recording time.
5.Available expanded memory socket of SD card. Up to 512MB
(When using 512 MB SD card, the recording time is available for over 8 hours.)
(If using 1G MB SD card, it will be divided into 99 recording tracks, each track with recording time less than 9:59:59 will be able to display time function on LCD.)
6.USB port to PC for easy download or duplication.
7.EQ mode selection (5 modes: Normal, Classic, Pop, Rock, Jazz)
8.REPEAT function (A-B Repeat, Repeat, Repeat All)..
9.Time counting
10.Two MIC-IN (L/L+R, R) jacks.
11.Line-in control key.
12.Stereo earphone jack.
13.Tack select, Play, Stop, Pause, Forward & Rewind control keys.
14.Mode control keys.
15.Rotary Volume Control for MIC REC. and Volume Level.

Usual manual of Digital Recorder & Player

1.Key---Power ,REC ,PLAY(II) ,¦ ,MODE ,? ,? (/LINE IN) , A-B(/EQ) , ⟲ (⟲), <<(/VOC,/MP3) , >>(/DEL.)

2. Tracks----1~99 tracks. May store 99 tracks both in VOC mode and MP3 Mode, flash memory or SD card. Built-in 128MB NAND flash memory has a capacity of approx. 60 min. recording time.

3.LCD:



3-1 MODE key
3-2 EQ select(CLASSIC, POP, ROCK, JAZZ)
3-3 VOC mode
3-4 MP3 mode

3-5 ● Recording
3-6 ▲ Playing
3-7 II Pause
3-8 DEL.: Delete file
3-9 A-B: A-B repeat
3-10 ⟲ Repeat
3-11 ⟲ Repeat All
3-12 LINE IN: Line-in audio source is available
3-13 Connecting to PC through USB
3-14 ⊟⊟ Track no.
3-15 ⊟⊟:⊟⊟ Time counting
3-16 F: Using flash memory
3-17 C: Using SD card

4.Key control

4-1 Power key
4-2 Upper key : Upper key for track selection. Track number will move quickly when push still for two seconds (this function will not work in MP3 mode).
4-3 Down key : Down key for track selection. Track number will move quickly when push still for two seconds (this function will not work in MP3 mode).
4-4 REC key : Record key. Select track no. in VOC mode in advance, push REC key to record, then push ? key to stop record. If the track you want to record is occupied, the LCD will show "?? " you must delete the content of the track before you record. When the memory is with 30 seconds left, the LCD will start to count 30,29,28, 27.....6,5,4,3,2,1,0 You can use microphones LINE IN audio source or both mixed source for recording source.
4-5 Play/ II key : Play key. Select the track no. you want to play, then push PLAY key to play. Push PLAY key during playing will pause play, then push PLAY key again to start playing. Push STOP Key to stop play.
4-6 ? key : STOP key. Push the key to stop all the motions, ex.: recording, playing, track selection.. ?
4-7 ▶▶key(Forward) : Forward key. The playing will move forward when press the key, back to normal speed when release the key.
4-8 ◀◀key(Rewind) : Rewind Key. The playing will move rewind when press the key, back to normal speed when release the key.
4-9 A-B repeat key : During playing, push this key to indicate any point as start point (A point) and finish point(B point) on a track, the machine will repeat from A to B point until you push the key again to release the function and continue to play.
4-10 ⟲ &⟲ Repeat key : In MP3 mode during playing, push REPEAT key once to"epeat the track" the LCD will show ⟲, and push REPEAT key twice to"repeat all the track" , the LCD will show ⟲ . Push the key at the third time to release repeat function. The "Repeat all " function can not be used in VOC mode.